

THERE IS CLAIMED:

1. A method of assigning optical carrier frequencies to signals to be transmitted in an optical transmission network using wavelength division multiplexing, said frequencies belonging to a comb of optical frequencies, the signals received after transmission in said network and carried by a given carrier frequency having a mean error rate that depends on said given carrier frequency, and one or more transmission constraint parameters being associated with any signal to be transmitted, which method consists in:
 - associating N sets of optical frequencies of the comb with N respective ranges of consecutive error rate values, each of said sets comprising frequencies generating a mean error rate in the associated range,
 - defining a measured signal transmission constraint level that is a function of said transmission constraint parameter(s) and may take N distinct values referred to as constraint values,
 - associating said N constraint values in increasing order respectively with said N sets of frequencies in decreasing order of the error rate values of the associated N ranges,
 - assigning any signal to be transmitted a constraint value obtained by applying said measurement, and
 - assigning said signal to be transmitted a carrier frequency belonging to one of said sets of frequencies that is associated with a constraint value at least equal to the constraint value assigned to said signal to be transmitted.
2. The method claimed in claim 1 wherein one constraint parameter of a signal is a transmission distance that said signal must travel without benefit of individual regeneration.
3. The method claimed in claim 1 wherein one constraint parameter of a signal is a minimum transmission data rate of said signal.
4. The method claimed in claim 1 wherein one constraint parameter of a signal is a maximum error rate imposed on said signal as received after transmission.
5. The method claimed in claim 1 wherein said frequencies of said comb belong to a grid of optical frequencies spectrally spaced at a regular fashion with a given increment and are spectrally spaced in an irregular

manner such that the number of frequencies belonging to at least one of said N sets of frequencies associated with a range of higher error rate values is less than the number of frequencies belonging to the set of frequencies associated with the same range of error rate values obtained if the frequencies of said comb are spaced regularly at said increment.

6. The method claimed in claim 1 wherein said measurement is obtained by addressing a table as a function of said transmission constraint parameter(s).
7. The method claimed in claim 1 wherein said measurement is obtained by means of an analytical function of said transmission constraint parameter(s).
8. An optical transmission network using wavelength distribution multiplexing to transmit signals carried by respective optical carrier frequencies belonging to a comb of optical frequencies, which network includes processor means adapted to assign optical carrier frequencies to the signals to be transmitted by a method as claimed in any of claims 1 to 7.